

(57) Abstract

A novel strategy for directed evolution of nucleic acids and proteins is described, in which target nucleic acid is copied by a polymerase devoid of proofreading function. Advantageous mutations generated during this process are recovered using an appropriate selection or screening procedure. The invention provides fast, inexpensive and non-laborious methods for practicing said strategy, which are utilized either separately or in combination with other methods for engineering biopolymers with desired properties. The invention furthermore provides kits for directed evolution according to the described methodology. In an aspect, the invention discloses methods and kits for producing nucleic acids encoding proteins with desired properties.